

CONFIDENTIAL

Release Date _____



Combined Drilling Ventures
NE NW 28-12N-28E 862

LEASE NO. State 13-92903

CONTRACTOR Terry Leach Moab, UT

CASING SIZE	DEPTH	CEMENT	LINER SIZE & DEPTH	DRILLED BY ROTARY
7"	1100'	150 Sx		DRILLED BY CABLE TOOL
				PRODUCTIVE RESERVOIR
				INITIAL PRODUCTION

REMARKS <u>Well turned over to landowner to convert to</u> <u>water well - Form 24 on file</u>	APP. TO PLUG _____ PLUGGING REP. _____ COMP. REPORT _____
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DEDICATION $N^{\frac{1}{2}}$ $NW^{\frac{1}{4}}$

(over)

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG 16 1987

DESIGNATE TYPE OF COMPLETION:
 New Well ☒ Work-Over ☐ Deepen ☐ Plug Back ☐ Same Reservoir ☐ Different Reservoir ☐ Oil ☐ Gas ☐ Dry ☒

DESCRIPTION OF WELL AND LEASE

Operator Combined Drilling Ventures, Inc. Address 12801 North Central Ex. Suite 1260
 Dallas, TX 75243
 Federal, State or Indian Lease Number or name of lessor if free lease Well Number Field & Reservoir
 State of Arizona 1-B St. Johns South
 Location County
 2400' fwl and 717 fnl n/2 nw/4 Apache County, Arizona

Sec. TWP-Range or Block & Survey
 SEC28-T12N-R28E

Date spudded Date total depth reached Date completed, ready to produce Elevation (DF, RKB, RT or Gr.) Elevation of casing hd. flange
 2/6/87 feet feet

Total depth P.B.T.D. Single, dual or triple completion? If this is a dual or triple completion, furnish separate report for each completion.
 3296' Dry

Producing interval (s) for this completion Rotary tools used (interval) Cable tools used (interval)
 none

Was this well directionally drilled? Was directional survey made? Was copy of directional survey filed? Date filed
 no

Type of electrical or other logs run (check logs filed with the commission) Date filed
 laterolog only to 1800' unable to log past

CASING RECORD

Casing (report all strings set in well - conductor, surface, intermediate, producing, etc.)

Purpose	Size hole drilled	Size casing set	Weight (lb./ft.)	Depth set	Sacks cement	Amt. pulled
	15 inch	10 3/4		380'	8 sacks 29 bbls	
	8 3/4	7"		1180'	110 sacks 1180'	

TUBING RECORD

Size	Depth set	Packer set at	Size	Top	Bottom	Sacks cement	Screen (ft)
in.	ft.	ft.	in.	ft.	ft.		

LINER RECORD

PERFORATION RECORD

Number per ft.	Size & type	Depth Interval	Am't. & kind of material used	Depth Interval
			6 sack grout	520' casing

ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD

INITIAL PRODUCTION

Date of first production Producing method (indicate if flowing, gas lift or pumping—if pumping, show size & type of pump:)

Date of test	Hrs. tested	Choke size	Oil prod. during test	Gas prod. during test	Water prod. during test	Oil gravity
			bbls.	MCF	bbls.	*API (Corr)

Tubing pressure	Casing pressure	Cal'd rate of Production per 24 hrs.	Oil	Gas	Water	Gas-oil ratio
			bbls.	MCF	bbls.	

Disposition of gas (state whether vented, used for fuel or sold):

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the landman of the Combined Drilling Ventures, Inc. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Date 4/13/87 Signature Chris Agui

Permit No.

STATE OF ARIZONA
 OIL & GAS CONSERVATION COMMISSION
 Well Completion or Recompletion Report and Well Log
 Form No. 4 File One Copy

DETAIL OF FORMATIONS PENETRATED

FORMATION	TOP	BOTTOM	DESCRIPTION*
			<p>Since this well was a wildcat & C.D.V. was unable to get a log we are for sure that the top of the Coconino formation is 500 ft. & the rest is in estimation from our geologist. See mud log attached hereto.</p>

* Show all important zones of porosity, detail of all cores, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

INSTRUCTIONS:

Attach drillers log or other acceptable log of well.

This Well Completion or Recompletion report and well log shall be filed with the State of Arizona Gas Conservation Commission not later than thirty days after project completion.

Form No. 4

TO: Oil and Gas Conservation Commission
State of Arizona

FEB 13 1987

O & G CONS. COMM.

This is to advise you that I accept the abandoned wildcat well, known as the
1 B State 2400' FWL, 717' FNL located on the N $\frac{1}{2}$, NW $\frac{1}{4}$ 4-4
of Section 28 Township 12N Range 28E, County of Apache
Arizona, as a water well to be used for domestic purposes.

Further, I accept full responsibility for the proper maintenance and use of
the above well, including final plugging, in full compliance with the Rules
and Regulations adopted by the Oil and Gas Conservation Commission.

I understand that I am responsible for compliance with the provisions of the
State Water Code, Chapter 1, Title 45, Arizona Revised Statutes and with any
applicable requirements of U.S. Geological Survey. THE PLATEAU

Signature PARTNERSHIP, an Arizona

Address General Partnership

By: H. J. Platt
General Partner

P.O. Box 426
St. Johns, AZ
85936

State of Arizona
County of Apache

On this, the 9th day of February, 1987, before me, _____

Beverly Ence, the undersigned officer, personally appeared

H. JAY PLATT, known to me (or satisfactorily proven)
to be the person whose name is subscribed to the within instrument and ack-
nowledged that he executed the same for the
purpose therein contained.

In witness whereof I hereunto set my hand and official seal.

Notary Public Beverly Ence

My Commission expires My Commission Expires December 9, 1988

State of Arizona
OIL & GAS CONSERVATION COMMISSION
WATER WELL ACCEPTANCE
Form 26 - File one copy

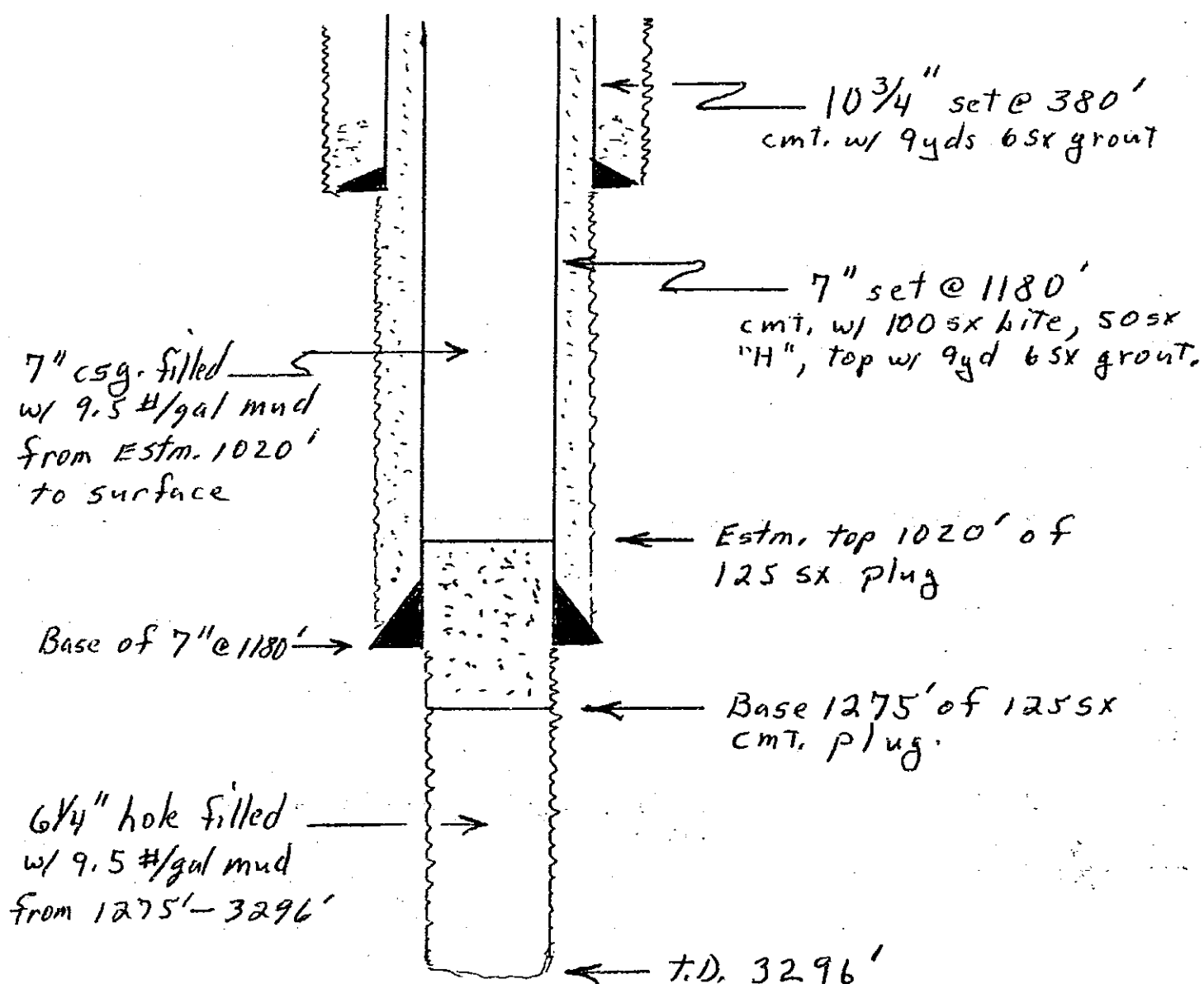
Permit No. _____

Base of lowest possible fresh water 1080 feet.

7" Surface ran to 1180 feet cemented w/ 100 sx
Howco Lite w/ 12% Gel, 12 1/2 #/sx Gilsonite, 1/2 #/sx
celoflake and 2% calcium chloride. Tailed in w/ 50 sx.
Class "H" w/ 12 1/2 #/sx Gilsonite, 1/2 #/sx celoflake and
2% Ca Cl. Topped out w/ 9 yd. 6sx grout.

B D9A.

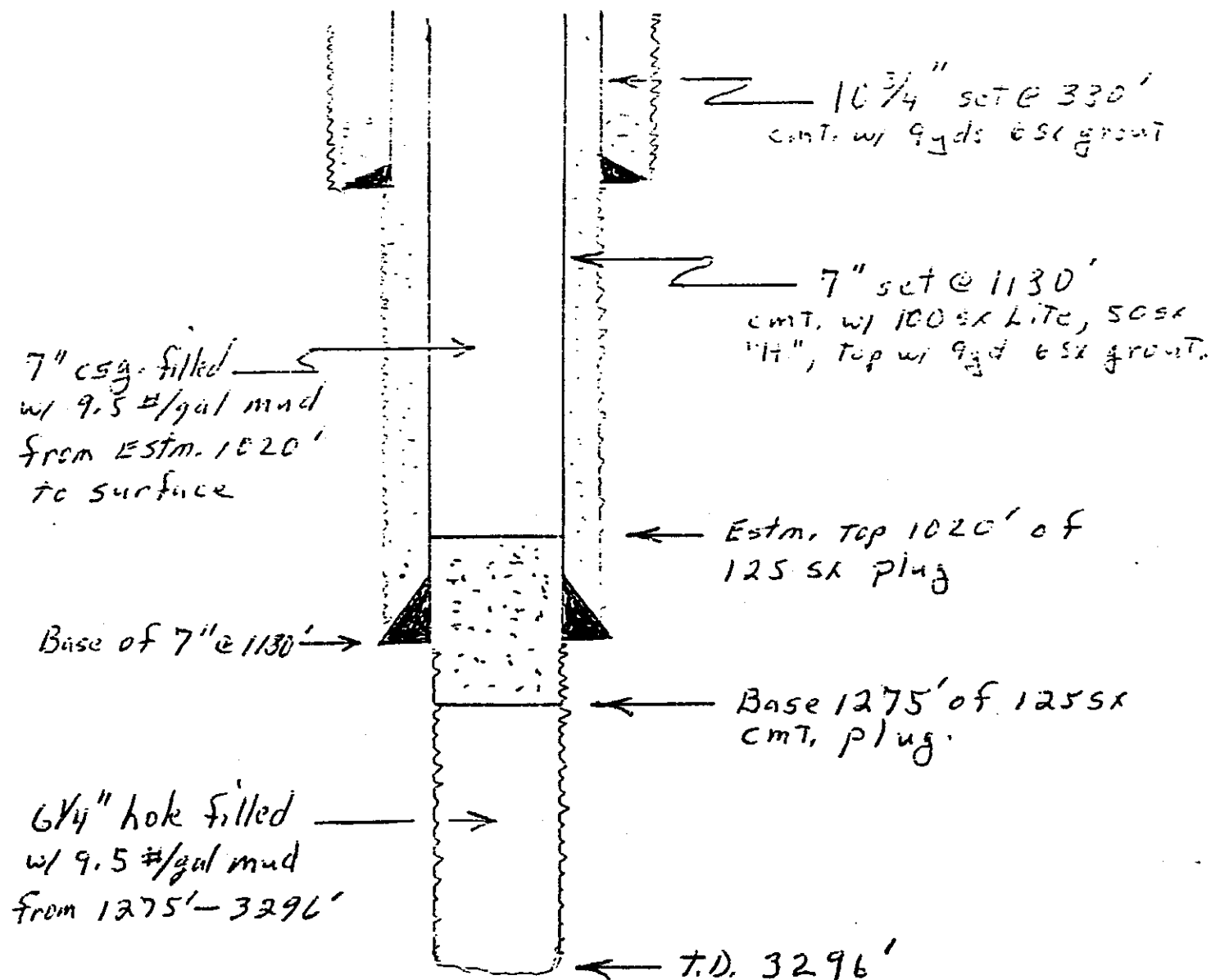
Ran 2 7/8" drill pipe to 1275'. Cement w/
125 sx. class "B" cement. Pull out of hole w/ 2 7/8"
drill pipe. Estimated top of cement 1020'. This
is 160 feet into the 7" surface pipe.



of lowest possible fresh water 1080 feet.
 7" Surface ran to 1180 feet cemented w/ 100 sx
 Howco Lite w/ 12% Gel, 12 1/2 #/sx Gilsonite, 1/2 #/sx
 celo flake and 2% calcium chloride. Tailed in w/ 50 sx.
 Class "H" w/ 12 1/2 #/sx Gilsonite, 1/2 #/sx celo flake and
 2% Ca Cl. Topped out w/ 9 yd. 6 sx grout.

B D9A.

Ran 2 7/8" drill pipe to 1275'. Cement w/
 125 sx. class "B" cement. Pull out of hole w/ 2 7/8"
 drill pipe. Estimated top of cement 1020'. This
 is 160 feet into the 7" surface pipe.



APPLICATION TO PLUG AND ABANDON

APR 3 1987

FIELD So. St. Johns Wildcat
OPERATOR Combined Drilling Ventures ADDRESS 12801 N. Cent. Expwy Dallas, Tex. 75243
Federal, State or Indian Lease Number State WELL NO. 1B
LOCATION 2400' FWL & 717' ENL, N/2 of NW/4 28-12N-8E
Apache County, Arizona
TYPE OF WELL Dry Hole TOTAL DEPTH 3296'
(Oil, Gas or Dry Hole)

ALLOWABLE (If Assigned)

LAST PRODUCTION TEST OIL _____ (Bbls.) WATER _____ (Bbls.)
GAS _____ (MCF) DATE OF TEST _____

PRODUCING HORIZON _____ PRODUCING FROM _____ TO _____

1. COMPLETE CASING RECORD.

10³/₄" set @ 380'. Cmt w/ 9yd. 65x grout
7" set @ 1180'. Cmt w/ 100 5x Howco Lite, 50 5x "H", and rop
out with 9yd 65x grout.

2. FULL DETAILS OF PROPOSED PLAN OF WORK.

P&A well. Run 2⁷/₈" drill pipe to 1275 feet. Pump 125 5x.
class "B" cement. Flush to end of drill string with 9.5 #/gal mud.
Estimated top of cement 1020 feet. This places cement 95 feet
below 7" surface up into surface pipe 160 feet. Above and
below the plug is 9.5 #/gal mud.

DATE COMMENCING OPERATIONS 2-7-87NAME OF PERSON DOING WORK Combined Drilling Ventures ADDRESS 12801 N. Cent. Expwy Dallas, Tex.

Signature

J. R. McKelvey
Drilling Engineer

Title

1601 Rustic Creek Terrace Edmond, Okla. 73013

Address

2-13-87

Date

Date Approved _____
STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By: _____

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Plug and Abandon
File Two Copies

Form No. 9

Permit No. _____

4/82

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE
(Other instructions on
reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
APR 3 1987

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

9. WELL NO.

10. FIELD AND POOL OR WILDCAT

11. SEC., T., R., W., OR BLK. AND
SURVEY OR AREA

12. COUNTY OR PARISH 13. STATE

SUNDRY NOTICES AND REPORTS ON WELLS
(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir.
Use "APPLICATION FOR PERMIT" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER ☐

2. NAME OF OPERATOR

Combined Drilling Ventures
12801 N. Central Expwy. Suite 1260 Dallas, Tex. 75243

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.
See also space 17 below.)
At surface

2400' FWL & 717 FNL
N/2; NW/4
Sec 28, Twp 12N-R6E 8E

14. PERMIT NO.

15. ELEVATIONS (Show whether OF, RT, GK, etc.)

GL. 6090

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

(Other)

PULL OR ALTER CASING

MULTIPLE COMPLETE

ABANDON*

CHANGE PLANS

SUBSEQUENT REPORT OF:

WATER SHUT-OFF

FRACTURE TREATMENT

SHOOTING OR ACIDIZING

(Other)

REPAIRING WELL

ALTERING CASING

ABANDONMENT*

(NOTE: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any
proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones perti-
nent to this work.)

well spudded 12-22-86

1-3-87 Set 380 ft. (KB) 10 3/4" 60 #/FT conductor, Cmt w/ 9 yds 65x grout.

1-9-87 Set 1180 ft. (KB) 7", 20 #/FT surface csg. Cmt w/ 100 SX Howco
Lite and 50 SX, class "H". Topped out w/ 9 yd 65x grout.

2-6-87 T.D. @ 3296 Feet.

2-7-87 P&A well. Drill pipe ran to 1275 feet. Pumped 125 SX
class "B" cement. Estimate T.O.C 1020 feet (160' into surface
pipe).

18. I hereby certify that the foregoing is true and correct

SIGNED

J.R. McKelvey

TITLE

Engineer

DATE

2-13-87

(This space for Federal or State office use)

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the
United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Combined Drilling #1-B State (PIN 862) Rudy Ybarra's notes

SEC 28, 12N, 28E
 Orig. Loc. 2400' FWL + 990' FNL
 corrected Loc. 2400' FWL + 690' FNL
 Abd. this Loc +
 moved to: 2400' FWL + 702' FNL
 Date Surveyed - refer to
 well File 855
 Cash Bond, Cashiers Check #409474
 to cover new location

1/21/87
 McKitty / Ybarra
 T.D. (present) 2058'
 • had to switch over to mud
 system because of water
 problems at interval
 1120' - 1150'
 • prob. ready to log on Sat. +
 w/call me

1/22/87
 Biggs / Brennan
 T.D. 2320'
 • Drig. rate 260' / 24 hr.

Basement @ 2750' as per Dan

1/24/87
 McKitty / Ybarra
 T.D. (present) 2814'
 • had loss-circ. problems over
 weekend
 • hit hard spot @ 2750' causing
 severe wear on bit
 • w/call me when he calls
 Schlumberger - probably early
 AM tomorrow

1/28/87
 Ybarra / Biggs
 T.D. (present) 2952'
 • pump problems
 • are still in reds beds, ss
 called it Naco?
 • w/decide in the morning
 if they will continue, other-
 wise will log + abandon
 • hole in pretty bad shape +
 samples poor

2/2/87
 C. Leach, Drig Contractor
 for Combined Drig Vent.
 reported:
 T.D. 3130'
 in conglomerate(?)

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I. SUMMARY OF STATE 1B WELL PLAN AND HISTORY

The State 1B well located approximately 7 miles south and 2 miles east of St. John, Arizona, was proposed to a total depth of 3,000 feet to test possible hydrocarbon bearing zones indicated by seismic, soil gas analysis and geological evaluations. Total cost of the exploratory test was projected at \$135,000.00 for three exploratory wells drilled to +/- 2500 feet.

The controlling points of the well plan were the setting of 10 3/4" conductor pipe at 400 feet, drilling an 8 3/4" hole to 1200 feet and setting 7" surface casing. A 6 1/4 inch hole was planned from 1200 feet to a total depth of 3000 feet. All drilling was to be performed using air, air-mist drilling. If commercial production was encountered a 4 1/2 inch production string was planned.

II. ORIGINAL WELL PLAN OUTLINE AND AFE.

Since the STATE 1B was a wildcat exploratory well, much information needed to prepare a realistic well plan outline and AFE were not available. Using information provided by various geologists, engineers and drilling contractors familiar with the area, casing points were selected and total costs for the project were estimated. No formal breakdown of individual well costs (individual AFE) was prepared. Information provided by the various professionals proved to be misleading and in some instances false. Because of poor information, lack of control in the drilling area, and underestimated drilling costs the STATE 1B was extremely costly and difficult to drill.

1. The Drilling of STATE 1B

The CDV State 1B was spudded 12-22-86 and reached a total depth of 3296' on 2-5-87. Conductor pipe (10 3/4") was set at 380 feet and 7" surface pipe set at 1120 feet. A 6 1/4" unstabilized hole was drilled from 1120 feet to total depth at 3296 feet. Three attempts were made to run open hole logs resulting in a Dual Induction Laterolog from 1810 feet to 1120 feet (surface pipe) and a Gamma Ray log from 1810 feet to surface. Many problems were encountered during drilling of the wildcat well which led to excessive cost overruns.

2. Weather

Average climate conditions for Apache County Arizona, December through January, are highs 41-43 degrees F, lows 18-21 degrees F and precipitation 0.3 to 0.4 inches. During the drilling of the STATE 1B Apache County recorded it's coldest and wettest weather in forty years. Temperatures dropped to as low as -21

degrees F below zero and snow storms were frequent and long lasting.

3. Lost Circulation

From surface to 496 feet several lost circulation zones were encountered. Several of the zones from surface to 96 feet were fractured sections or caverns connected to the blow holes in the immediate area. From 96 feet to 496 feet most lost circulation zones resulted from very porous water sands that were highly permeable and unconsolidated. From 496 feet to 1320 feet major washout- lost circulation zones occurred from 1188 feet to 1320 feet. For this reason any future project should set surface pipe below 1330 feet. [Also, it is highly unlikely cement can ever be circulated to surface.

4. Air Mist - Mud Drilling

Conventional Air-Mist drilling was used to drill an 8 3/4" pilot hole from surface to 496 feet. Air-mist was again used in conjunction with a 15" hole opener to enlarge the hole from surface to 420 feet. The use of air mist proved to be very slow and expensive. Because of the many fractures and caverns encountered much of the drilling was performed blind. Up to 4 gallons per hour of drilling soap were required in order to keep the drill string from sticking.

From 380 feet (base of 10 3/4" conductor) to 1120 feet air-mist drilling is impractical. The Coconina water sand was encountered at approximately 500 feet which is a prolific water aquifer and cannot be drilled by conventional air-mist.

From 1120 feet to 3296 feet several other unique problems were encountered. At 1125 feet, directly below surface pipe, large amounts of water along with porous zones made air-mist drilling impractical. Poor returns and poor samples caused air-mist operations to be halted and the hole converted over to fresh water gel. Fresh water gel was selected because of its compatibility with conventional open hole logs and lower price. It was felt any future salt water zones encountered could be held in check through mud weight. At 1800 feet a highly water soluble salt-shale interval was drilled that exposed to fresh water gel (filtrate water) dissolved and contaminated the mud system. Since \$2,000.00 + in hauling charges had been experienced two days earlier to haul the fresh water gel to location and the salt-shale section was expected to be only a few feet thick, it was decided to continue to drill using fresh water and fresh water gel slugs.

Salt
→

This created a major problem when the salt-shale section extended from 1800 feet to past 2700 feet. Samples of cuttings became poor at best and constant sticking of the drill string was common place. In retrospect, the failure to convert to salt gel once salinities rose above 30,000 ppm was a major mistake.

5. Mud Pump and Mud System

The mud pump (16 * 7 Garder-Denver) and the earth pit mud system were a major factor in cost overruns. The mud pump fluid end was in very poor condition frequently breaking down and when working providing very poor efficiency. In almost all instances, barely enough circulation to clean the hole was maintained if the mud hopper was used to mix mud. This situation was helped somewhat at the end of the hole by the use of a premix pit with a centrifugal pump. The earth pits were dug out of shelf rock which had many cracks and crevices that no doubt lead down and connected to subsurface caverns. This created lost circulation not downhole, but at the surface.

Once the system was converted over to salt gel, the earth pits created another problem. A salt gel system must continually be stirred and agitated in order to work properly. It was almost impossible to stir and agitate the system; this result in very poor yielding and loss of efficiency.

6. Drill String Design

The 2 7/8 inch drill pipe used was adequate while drilling with air-mist but impractical for mud drilling. While the mud pump was able to provide volume, it was unable to attain high enough pressures to overcome the extremely high frictional pressure loss created by the small inside diameter of the 2 7/8 inch drill pipe. Calculations show over 85% of the hydraulics generated by the pump was lost in friction pressure drop through piping. This situation is reverse hydraulics. High annular velocities around the drill collars with almost all hydraulic horsepower lost before it gets to the bit resulted in large washed out sections due to turbulent flow around the drill collars (in excess of 300 FPM), bit balling and poor penetration rates. Drill collar weight was another critical item. As a general rule of thumb only 50% of total drill collar weight is to be used if a hole is to be kept straight and the drill collars in good condition. The 10,000 lbs. of drill collar weight would have been sufficient to drill with air-mist but not for mud drilling. Also, as a generally accepted rule of thumb weight run on a bit is normally

calculated at 2,000 lbs. per inch of diameter. Running a 6 1/4" diameter bit our maximum weight on the bit should not exceed 12,500 lbs. Since 17,000 - 19,000 lbs. weight was required in order to advance penetration rates to tolerable levels a larger diameter bit, stabilization and more total drill collar weight should have been used.

7. Drill Bits

Several of the 6 1/4 inch rerun bits used performed very poorly. These bits were selected for air drilling and would have worked fine for that purpose. However, after running the last of these bits in a mud environment, it was discovered a hole had been drilled in each bearing to enhance cooling. This works fine in an air system, but caused premature bearing failure in a mud system.

Bit selection was very speculative due to the wildcat nature of the well. Bit performance and cuttings now provide adequate information to determine: mill tooth bits may be used from surface to 500 feet; from 500 feet to 2750 feet, 1 or 2 type button bits may be used. Hardness tests and analysis of cuttings should provide answers to determine bit selection below 2750 feet. In absence of tests and analyses it is felt a bit of type 7 or harder along with shock protection for the drill string will be needed.

8. Location

Initial preparation of the drill site was inadequate due to an inexperienced local contractor. The local contractor was recalled and attempted to resolve the situation, but was unable to perform due to lack of knowledge. The careful selection of an oilfield dirt contractor, which may be difficult to find nearby, should be of utmost importance in the successful start of a future well.

9. Communication

Communication problems developed during the drilling of the State 1B between the contractor, CDV and the drilling engineer. Although resolved, these circumstances could have disrupted or hampered the drilling operations.

A. Drilling Contract

A good, drilling contract should be reviewed between the contractor, drilling engineer, and CDV on the future wells prior to the spud date, with

each of the parties duties and obligations detailed.

10. Water Hauling

The use of the 80 bbl. water truck for hauling water from the river 1 1/2 miles away was originally intended only to haul water needed for the mist pump while air drilling. Once air-mist drilling became impractical, a water line and pump should have been installed to cut down on this expense. However, on future wells, by utilizing the proper mud system and water from the well created by the drilling of the State #1-B, the water expense will be nil.

11. Establishment of Credit - Discounts

Since three major companies (Haliburton, Baroid, and Schlumberger) were used on the well, the establishment of credit could have resulted in substantial discount savings. The services provided by Haliburton and Baroid would have been subject to a 20% discount if credit had been established prior to the spud date. This represents a large savings that should be taken advantage of in the future.

12. Mud Logging - Trailer

A mud logging trailer was not used at this time, and the geologist and drilling engineer had no place to wash, clean and evaluate samples or lay down during long hours when 24 hour supervision was required. The use of a mud logging trailer will be a valuable asset on any future well.

III. SELECTION OF CONTRACTORS AND EQUIPMENT

The location of the well is 216 miles from the closest oil field service point, Farmington, New Mexico. All services provided from this point were found to be quite expensive. In many instances the remoteness of available products and services resulted in excessive downtime.

The drilling contractor selected was placed in a very difficult and comprising position. The contractor was using a contracted rig that although adequate to drill a 3,000 foot air-mist hole, was poorly equipped and not set up for mud drilling. Because of the economics of the drilling contract the contractor ran two crews of 4 men working 12 hour shifts. Due to the extreme length of time required to drill the well this resulted in excessive overwork, which did not, but could have resulted in major problems. The toolpusher and crews should be commended for doing an outstanding job under very difficult circumstances.

However, these circumstances should be prevented in future operations.

Local contractors and suppliers were terrible at best. Only one contractor (fuel supplier) made any effort to work with anyone associated with the well. In any future operations every effort should be made to limit the use of local contractors. Their work was found to be of poor quality and vastly overpriced.

IV. RECOMMENDATIONS TO REDUCE PROBLEMS OF FUTURE WELLS

Have a drilling engineer prepare a well plan and outline. Flag all critical points such as lost circulation zones, ect. A good well plan outline should contain depths, formation tops and type, drilling problems, type of formation evaluation, hole size, casing (size & depth), fracture gradients, formation pressure gradient, and mud (both type and weight). Prepare a depth vs. days graph. Based on the depth vs. days graph and the well plan-outline, prepare an AFE.

Prepare a drilling contract using the standard IADC form. List all equipment required to drill the proposed well. The only blanks should be the daywork, standby and move in charges. This contract should be used for all drilling contractors as the form to bid from. Attached to all drilling contracts should be a copy of the proposed well plan outline.

Once a drilling contractor has been selected, hold a prespud meeting between CDV representatives, drilling contractor, drilling engineer, geologist, mud logger, and mud engineer. Discuss the drilling of the State 1B, special problems, proposed well plan and ask everyone involved for comments and suggestions. Also helpful if known in advance are service contractors (i.e. cementing and logging). During the spud meeting discuss areas of responsibility and establish a good communications network. A list should be prepared containing everyone's address and phone numbers, both work and home.

By preparing a good solid well plan and outline, a well thought out AFE, selecting a drilling contractor with equipment needed to perform the task, and holding an open and informative pre spud meeting any future wells drilled in the very difficult area will have a much better chance of attaining their goals.

V. PROPOSED WELL PLAN FOR FUTURE ACTIVITY

1. Conductor - 13 3/8" Casing Point - 480'

Drill a 15" hole to 480 feet. Use fresh water with occasional gel slugs. Much of this drilling will be performed blind. Use 2-9 inch drill collars to help keep hole straight in conjunction with regular collar string. A milltooth (medium tooth) properly jetted will provide fastest penetration. Cement with 100sx class "H" or "B" with 2% calcium chloride. Use a guide shoe, float collar and 3 centralizers at 40' intervals. Wait on cement 8 hours before drilling out.

2. Surface - 8 5/8" Casing Point - 1380'

Drill a 12 1/4" hole to 1380'. Use fresh water to drill cement in shoe joint. Once all cement has been drilled, discard cement contaminated water and mud system up using fresh water gel. Use 2-9 inch drill collars in conjunction with a minimum of 40,000 lbs. standard collar weight to maintain hole angle under 2 degrees. A high speed (RPM), long button bit such as Reed Tool Company HP-51 will provide maximum penetration. This type button bit, properly jetted, is designed to produce penetration rates comparable to milltooth bits but should last five times longer than a non seal bearing bit. If a long tooth button bit is unavailable, a sealed bearing milltooth (medium) should be used.

Set 8 5/8 inch casing at approximately 1380 feet and cement with a combination of lite cement with LCM and tail in with 100sx class "H" or "B" cement. Due to the high porosity and permeability of many of the water sands drilled in this interval, it is unlikely cement can be circulated to the surface on the first attempt. If cement is not circulated, a temperature survey should be run and the results discussed with the Arizona Corporation Commission representative. Future cementing instructions will result from this discussion.

3. Production String 4 1/2" - 5 1/2" Casing Point-4000'

Drill out casing shoe using fresh water. Discard cement contaminated fluid and replace with fresh water. Saturate system with salt and convert system over to Salt Gel. This is extremely critical since much of the remaining hole to be drilled contains laminated salt sections that dissolve and wash out in a fresh water system.

From 1380' to approximately 2750' a long button, high RPM bit should be used (i.e. RTC-HPSI). From 2750' to 3280' a 5 series button may be required. From 3280' on a 7 series or harder button bit will be needed until softer formations are drilled.

If oil production is present run 5 1/2" casing to total depth. If gas production is present run 4 1/2" casing.

All hole drilled in this interval should be 7 7/8" incorporating either a packed hole assembly or pendulum effect.

VI. CEMENTING PROGRAM

1. Conductor 13 3/8" - 15" hole
Cement with 100sx class "H" or "B" cement containing 1/2 #/sx celoflake and 2% calcium chloride. Use a guide shoe, float collar and 3 centralizers at 40' intervals. The float collar and guide shoe should be thread locked. Wait 8 hours before drilling out.

2. Surface 8 5/8" - 12 1/4 hole
Bottom Stage Lead - Lite, 10 #/sx Gilsonite
2% CaCl
Sacks - 250
Yield - 1.99 cu. ft./sx
Weight - 12.4 PPG
Water - 9.9 gal/sx
Tail - Class "H", 2% CaCl, 1/2 #/sx Celoflake
Sacks - 100
Yield - 1.18 Cu. Ft/sx
Weight - 15.6 #/gal.
Compressive - 1200 psi in 8 hrs.
Strength

Run a float collar, float shoe and 10 centralizers spaced out evenly. Thread lock float collar and float shoe. Wait 8 hours before drilling out.

**If cement does not circulate to the surface, run temperature survey in 12 hours and discuss results with Arizona Corp. Comm. for instructions.

3. Production - 4 1/2" or 5 1/2" - 7 7/8" hole
Cement with Class "H", 10% Salt, 0.6% Halad 322A, and 1/4 #/sx celoflake.
Sacks - 125
Yield - 1.31 cu. ft./sx
Weight - 15.2 #/gal
Compressive - 4980 psi in 8 hours
Strength

Run a float collar and float shoe. Thread lock both collar and shoe. Run 10 centralizers spaced one each collar until all are used. Run 1000 gallons of mud flush ahead of cement slurry. Rotate pipe until just prior to bumping plug. During displacement once first pressure is noted (fresh water displacement catches cement) pump rate is to be slowed to 1 1/2 - 1 3/4 BPM in order to lift cement in plug flow. Once plug has bumped release pressure. If the floats hold

set casing slips in surface head. Wait a minimum of 72 hours before running bond log.

VII. FORMATION EVALUATION

<u>DEPTH</u>	<u>HOLE SIZE</u>
surface - 480'	15"
Single shots, Totco 7 degree instrument (100' intervals)	
480' - 1380'	12 1/4"
Single shots, Totco 7 degree instrument (200' intervals) Mud logger and geologist on hole Logs only as directed by geologist	
1380' - 4000'	7 7/8"
Single shots, Totco 7 degree instrument (250 - 400' intervals) Logs- Dual Induction Laterolog, GR, Cal. Sonic, GR, Cal *Sonic may or may not be Integrated.	

VIII. MUD PROGRAM

Depth Interval 0' - 480'

Mud Type: Clear water with gel slugs

Depth Interval 480' - 1380'

Mud Type: Low Solids Now-Dispersed
Additives: Zeogel, Impermet, Salt, Aldacide
Mud Weight: 10.0 - 10.4 PPG
Viscosity: 40-45 sec/qt.
Fluid Loss: 10 - 12 c.c.

* Raise viscosity to 80 - 100 sec/qt. 12 hours prior to logging. Make sure new materials have 2 complete circulations before stopping circulation.

IX. BOTTOM HOLE ASSEMBLY PROGRAM

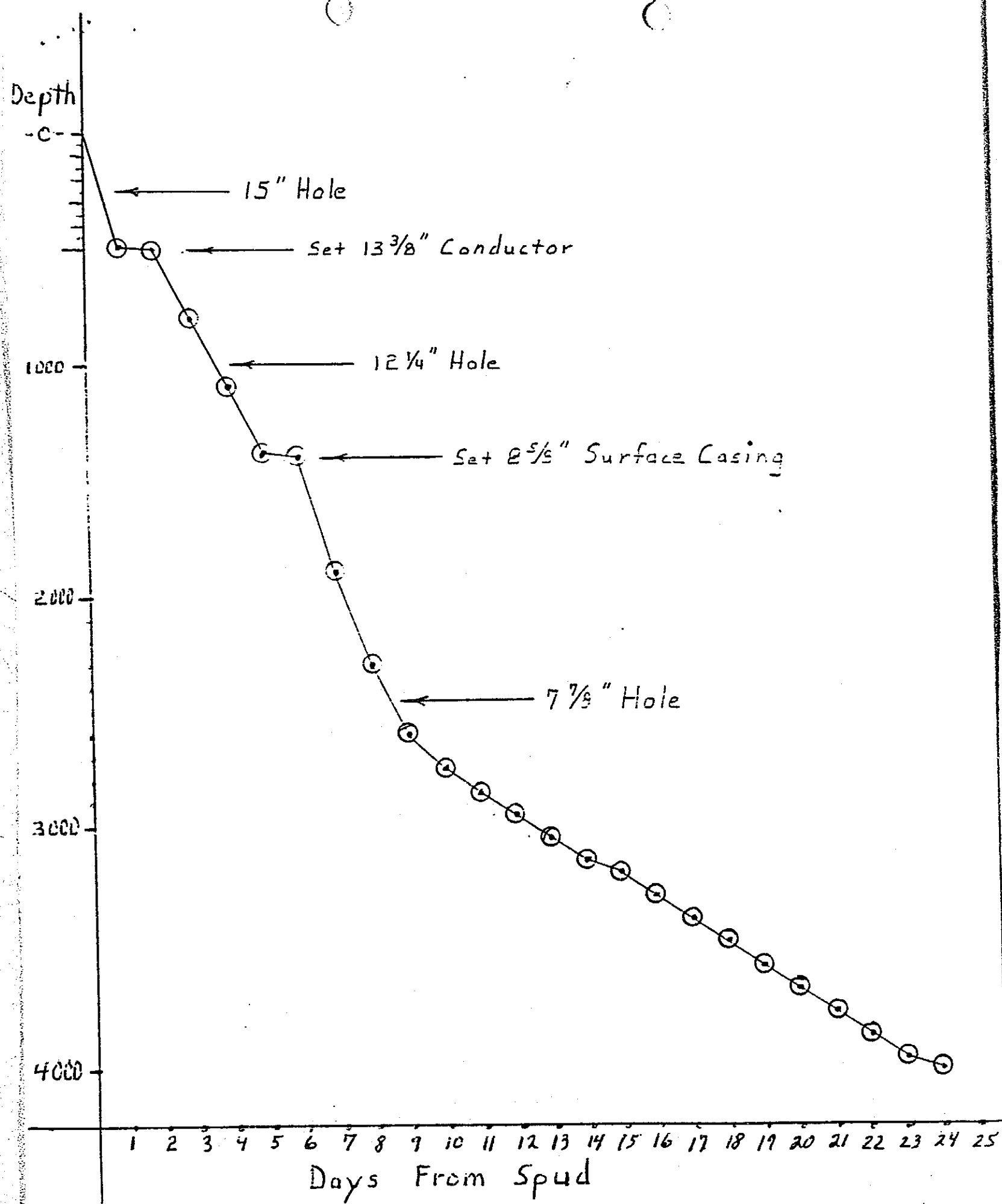
	<u>15" Hole</u>
Packed Hole	Pendulum
	Bit
N/A	2 - 9" D.C.
	18 - 6 1/2 D.C.
	<u>12 1/4" Hole</u>
	Bit
N/A	2 - 9" D.C.

1 - stabilizer

7 7/8" Hole

Bit
3 point near bit reamer
1 - short (10') 6 1/2" d.c.
Stabilizer
1 - 6 1/2" D.C.
Stabilizer
18 - 6 1/2" D.C.

Bit
4 - 6 1/2" D.C.
Stabilizer
14 - 6 1/2" D.C.



STATE OF ARIZONA
OIL AND GAS CONSERVATION COMMISSION

PERMIT 862

REPORT ON PROPOSED OPERATIONS

Combined Drilling Ventures, Inc.
P. O. Box 515263
Dallas, TX 75251-5263

Phoenix, ARIZONA
December 15, 1986

Your proposal to drill well No. 1-B State
A.P.I. No. 02-001-20286, Section 28, T. 12N, R. 28E, G&SR B. & M.,
field, St. Johns area, - pool,
Apache County, dated 12/15/86, received 12/15/86 has been examined in conjunction with records
filed in this office. THE PROPOSAL IS APPROVED PROVIDED:

1. Drilling mud consistent with sound drilling practices shall be used at all times. Quantities of drilling mud materials sufficient to insure well control shall be maintained readily accessible for immediate use at all times.
2. The well is cased and cemented in such a manner as to protect all zones that contain oil, gas, or fresh water, and to provide well control during drilling operations.
3. Blowout prevention equipment shall be installed, used, maintained, and tested in a manner necessary to assure well control throughout the drilling, completion or abandonment of the well.
4. Samples of all cores and cuttings, taken at maximum intervals of ten feet, shall be shipped or mailed, charges prepaid to:
 - a. Oil & Gas Conservation Commission, Phoenix, office.
 - b. Bureau of Geology & Mineral Technology, University of Arizona, 845 N. Park, Tucson, AZ 85719.
5. The status of completed drilling operations (Form 25) shall be completed and filed with the Commission on a timely basis.
6. THIS COMMISSION SHALL BE NOTIFIED:
 - a. Immediately when drilling operations commence.
 - b. To witness the running and cementing of the 7" casing.
 - c. To inspect the installed blowout prevention equipment prior to drilling below the shoe of the 7" casing at 900'.
7. Personnel to call to witness above operations:
R: A. Ybarra (602) 827-1657
D. J. Brennan (602) 249-3178

BOND Cash Bond, \$5,000
Cashier's Check #409474

D. J. BRENNAN, Executive Director

By R. A. Ybarra
Enforcement Director

A copy of this report and the proposal must be posted at the well site prior to commencing operations.

Records for work done under this permit are due within 30 days after the work has been completed or the operations have been suspended.



PERMIT TO DRILL

This constitutes the permission and authority from the
OIL AND GAS CONSERVATION COMMISSION,
STATE OF ARIZONA,

To: COMBINED DRILLING VENTURES, INC.
(OPERATOR)

to drill a well to be known as

1B STATE
(WELL NAME)

located 2400' FWL & 717' FNL

Section 23 Township 12N Range 23E, APACHE County, Arizona.

The N $\frac{1}{2}$ NW $\frac{1}{4}$ of said
Section, Township and Range is dedicated to this well.

Said well is to be drilled substantially as outlined in the attached Application and must be drilled
in full compliance with all applicable laws, statutes, rules and regulations of the State of Arizona.

Issued this 15 day of December, 1986.

OIL AND GAS CONSERVATION COMMISSION

By [Signature]
EXECUTIVE DIRECTOR

PERMIT 00062

RECEIPT NO.

A.P.I. NO. 02-001-20266

State of Arizona
Oil & Gas Conservation Commission
Permit to Drill

FORM NO. 27

API NO. 02-001-20286

APPLICATION FOR PERMIT TO DRILL OR RE-ENTER

APPLICATION TO DRILL ☒RE-ENTER OLD WELL ☐

Combined Drilling Ventures, Inc.

NAME OF COMPANY OR OPERATOR

P. O. Box 515263

Dallas
CityTX 75251-5263
State

Address

Cary Leach

Drilling Contractor

P. O. Box 757, Moab, UT 84532

Address

DESCRIPTION OF WELL AND LEASE

Federal, State or Indian Lease Number, or if fee lease, name of lessor	Well number	Elevation (ground)
State 13-92903	1B	6125'
Nearest distance from proposed location to property or lease line:	Distance from proposed location to nearest drilling, completed or applied—for well on the same lease:	
2400' FWL & 717' FNL feet	None feet	
Number of acres in lease:	Number of wells on lease, including this well, completed in or drilling to this reservoir:	
640	three (3)	
If lease, purchased with one or more wells drilled, from whom purchased:		
Name Address		
N/A		
Well location (give footage from section lines)	Section—township—range or block and survey	Dedication (Comply with Rule 105)
	Sec. 28, T12N R28E	N $\frac{1}{2}$ NW $\frac{1}{4}$
Field and reservoir (if wildcat, so state)	County	
Wildcat	Apache	
Distance in miles, and direction from nearest town or post office		
5 $\frac{1}{2}$ miles south of St. Johns, Arizona		
Proposed depth:	Rotary or cable tools	Approx. date work will start
3,000'	Rotary	Dec. 18, 1986
Bond Status	Organization Report	Filing Fee of \$25.00
Cash. Ck. on file	On file X Or attached	Attached X
Amount \$5,000.00		

Remarks:

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Landman of theCombined Drilling Ventures, Inc. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature

Date

Permit Number:

862

Approval Date:

Approved By:

Notice: Before sending in this form be sure that you have given all information requested. Much unnecessary correspondence will thus be avoided.

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Application to Drill or Re-enter
File Two Copies

Form No. 3

(Complete Reverse Side)

1. Operator shall outline the dedicated acreage for *both* oil and gas wells on the plat.
2. A registered professional engineer or land surveyor registered in the State of Arizona or approved by the Commission shall show on the plat the location of the well and certify this information in the space provided.
3. ALL DISTANCES SHOWN ON THE PLAT MUST BE FROM THE OUTER BOUNDARIES OF THE SECTION.
4. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES ☒ NO ☐
5. If the answer to question four is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? YES ☐ NO ☐ If answer is "yes," Type of Consolidation _____
6. If the answer to question four is "no," list all the owners and their respective interests below:

Owner	Land Description

CERTIFICATION

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

C. Agee *Chris Agee*

Name Landman

Position Combined Drilling Ventures, Inc

Company _____

Date 12/15/84

I hereby certify that the well location shown on the plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

4-4-86

Date Surveyed See File #855

Registered Professional Engineer and/or Land Surveyor

Certificate No. _____

PROPOSED CASING PROGRAM

Size of Casing	Weight	Grade & Type	Top	Bottom	Cementing Depths	Sacks Cement	Type
10 3/4"	40.5	J-55	surface	30'	TD to surface	10 sx.	A
7"	23.0	J-55	surface	900'	circulate	325 sx.	B
4 1/2"	9.5	J-55	surface	TD	TD to 700'	170 sx.	B

COPY

COMBINED DRLG. VENTURES

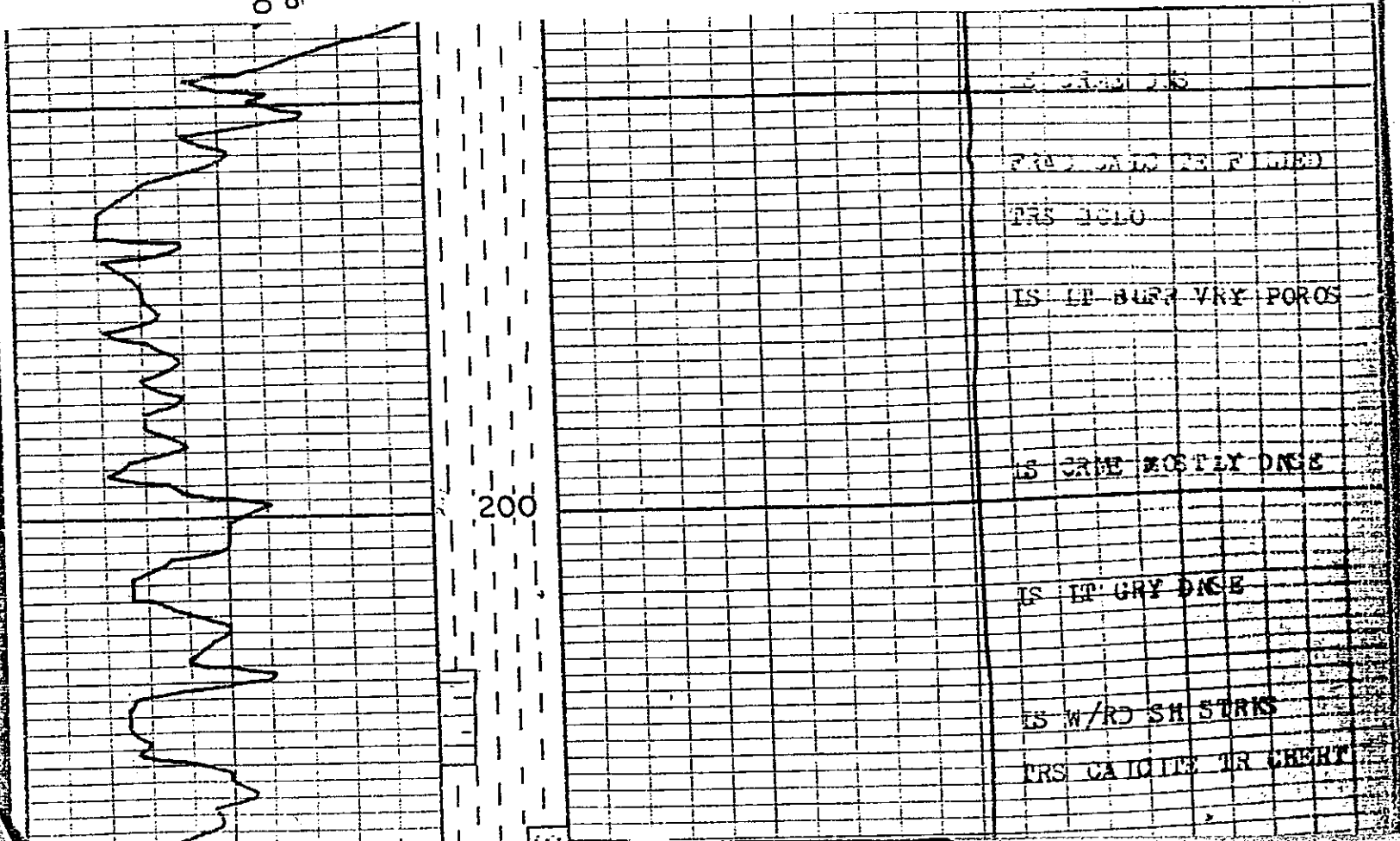
NO 1 STATE
WC
APACHE ARIZONA

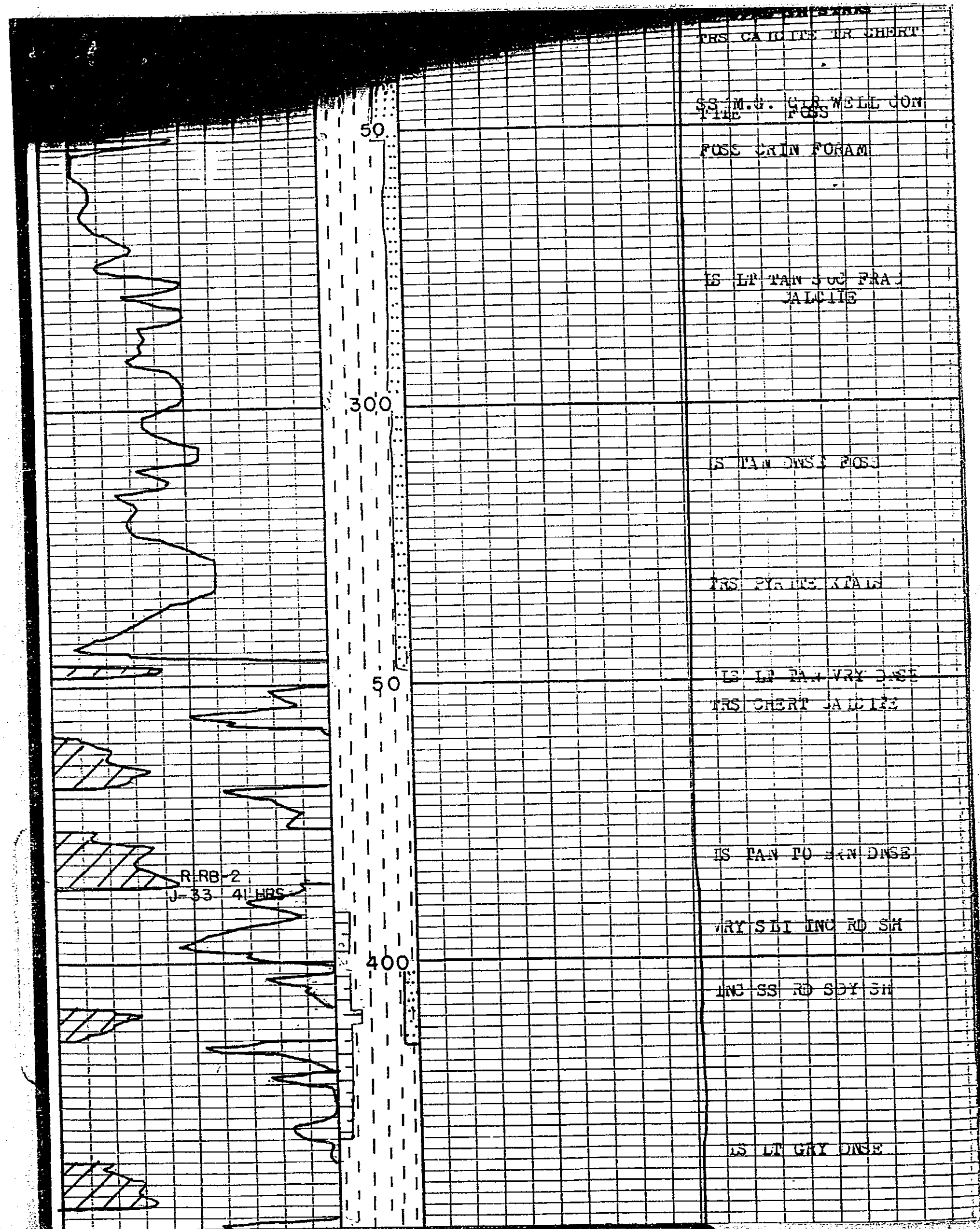
470'-10 3/4"
1160'-2"
6 1/4

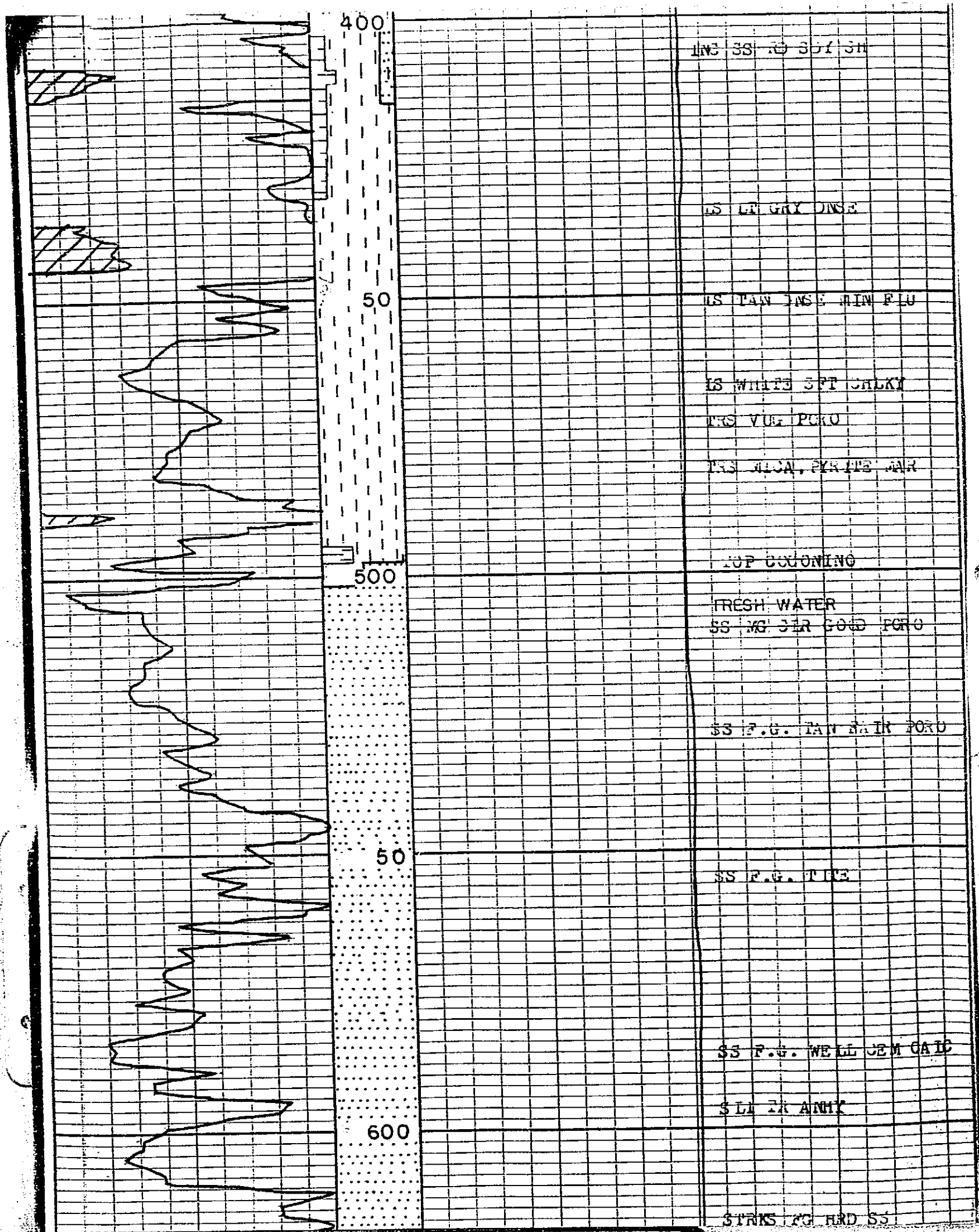
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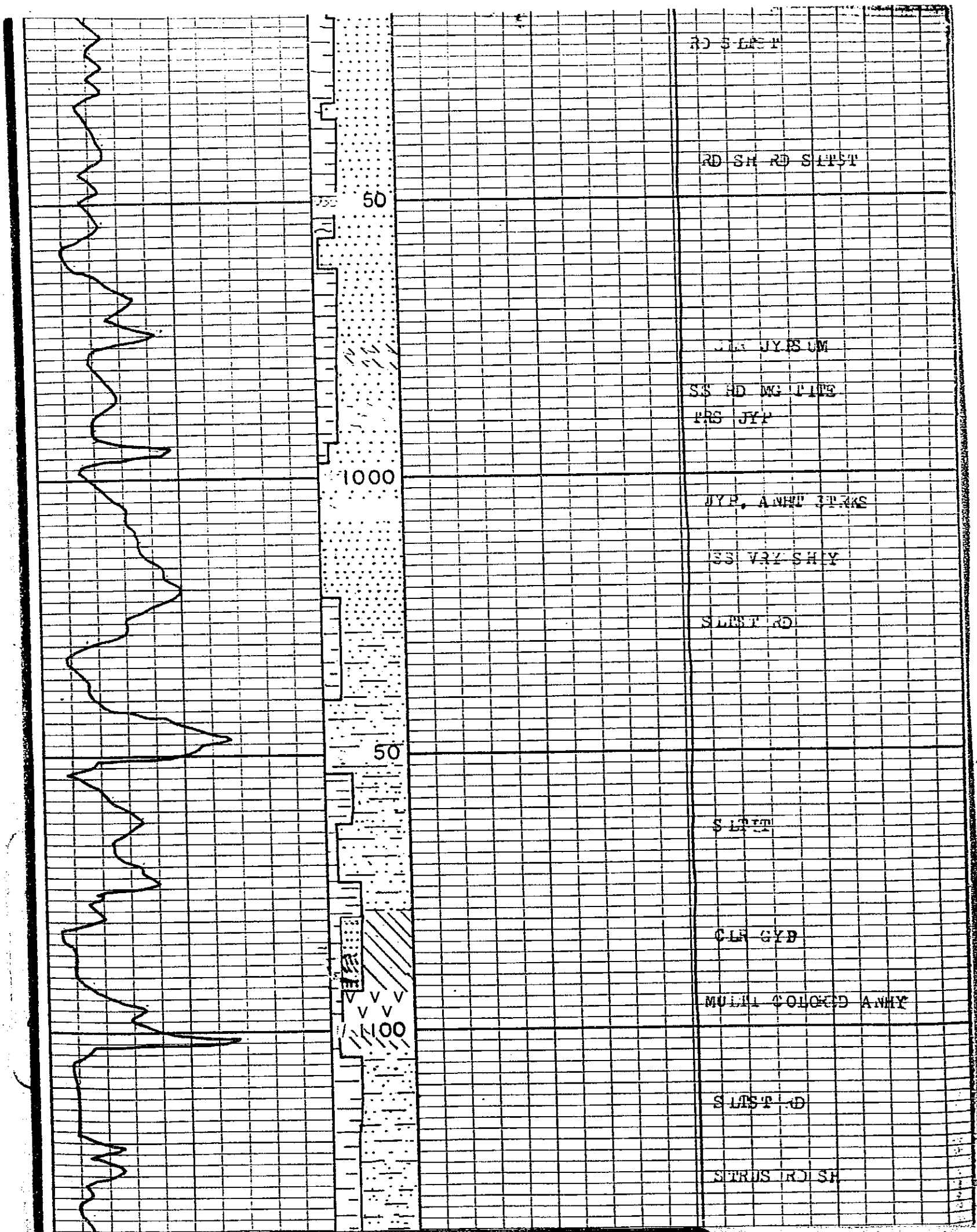
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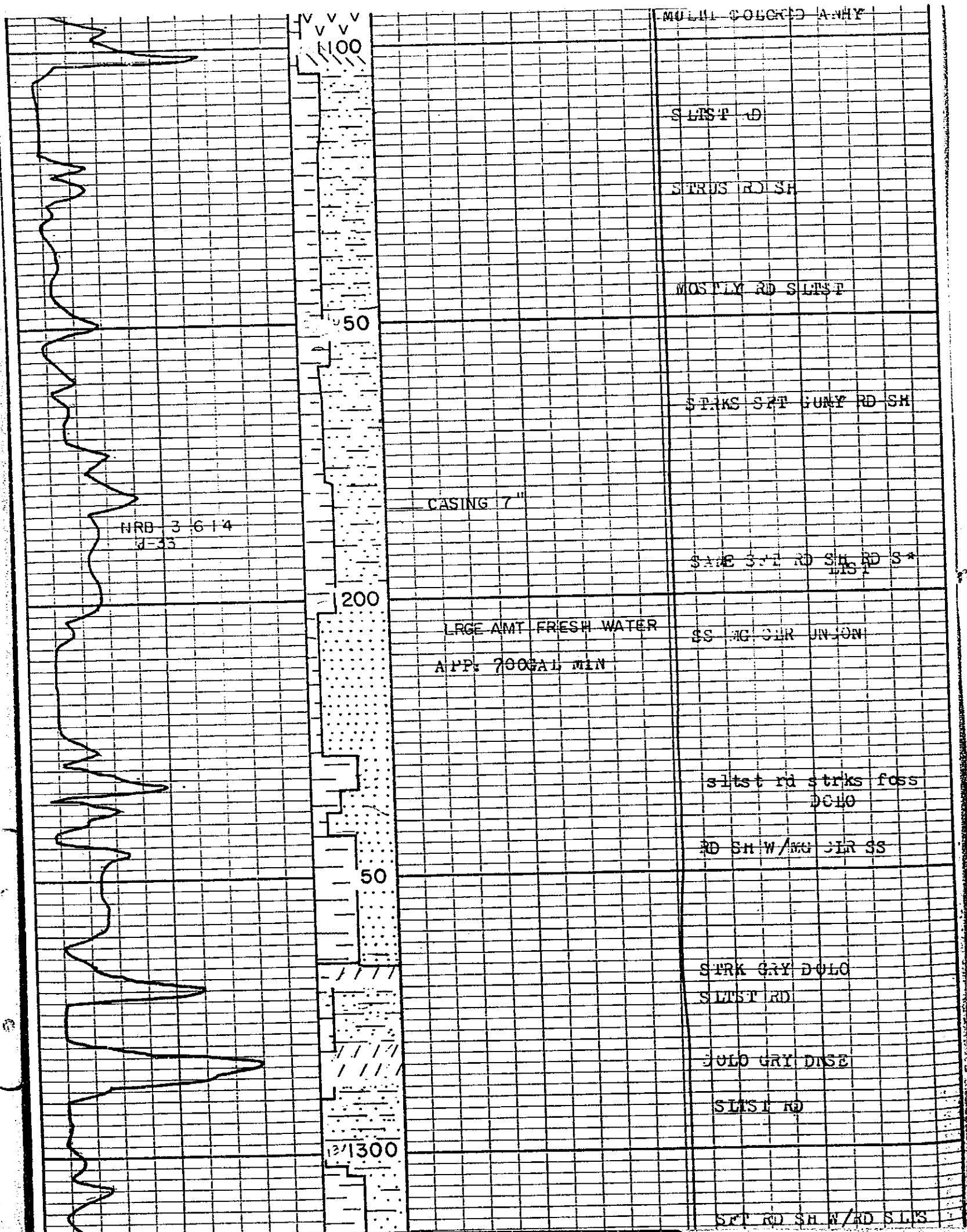
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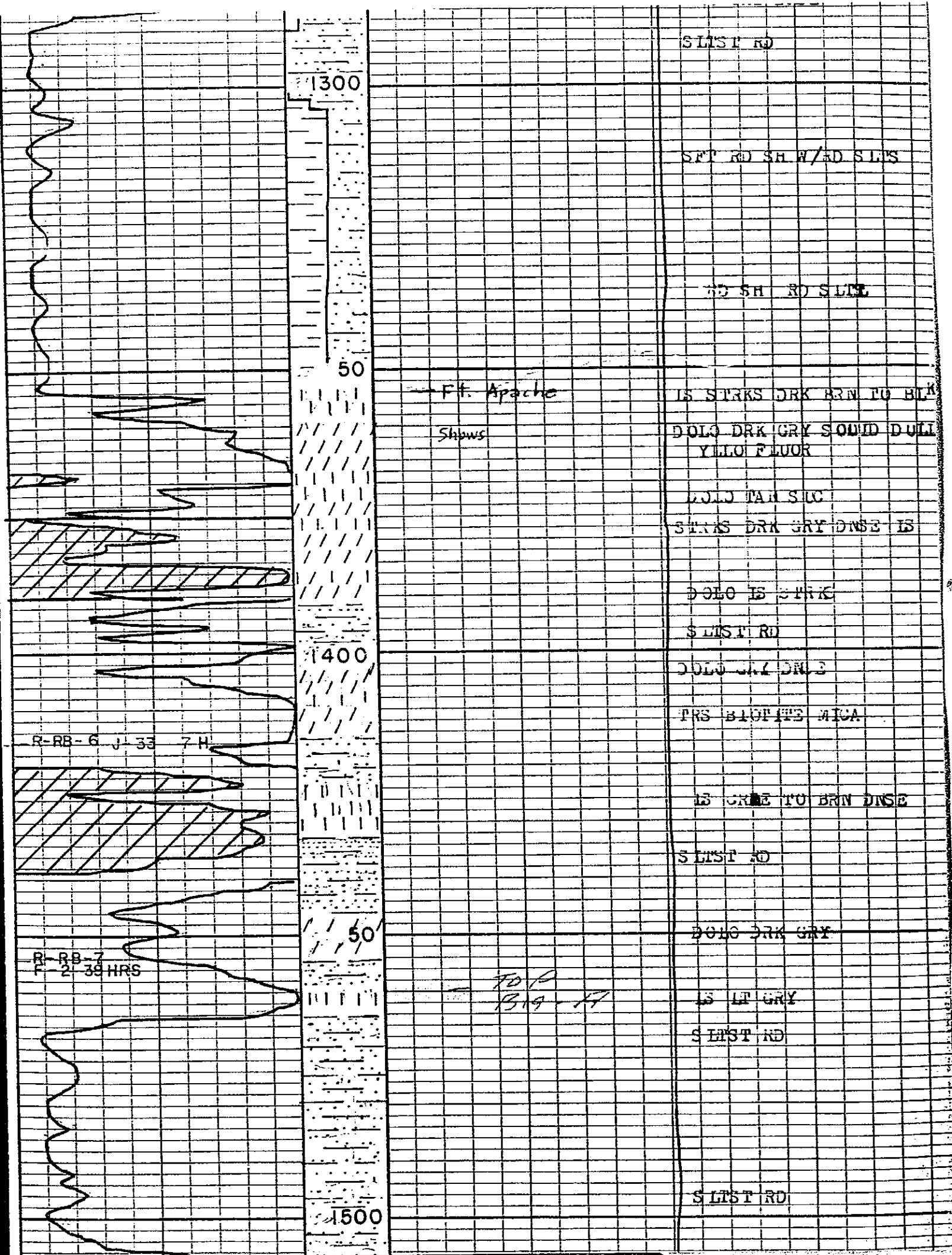
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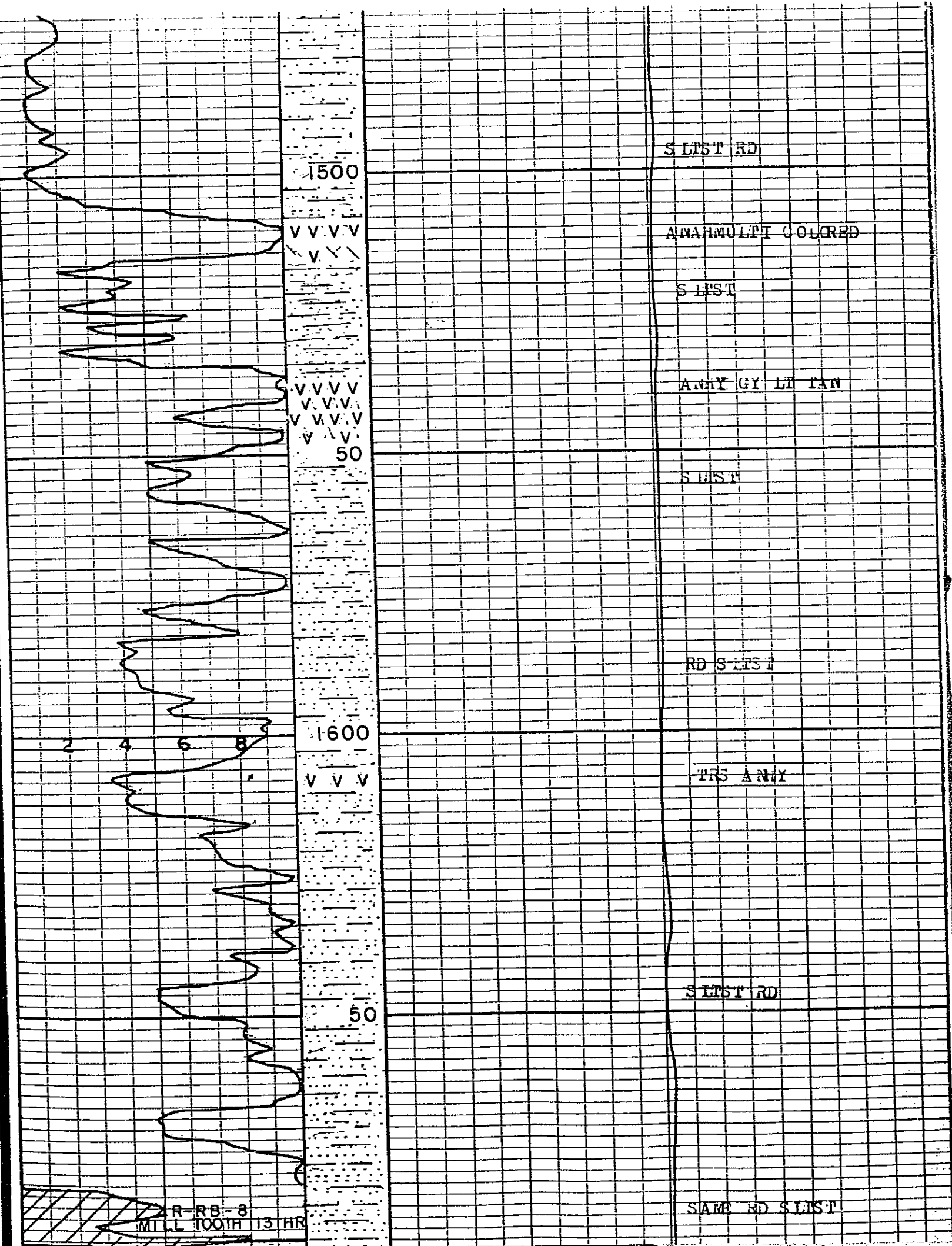
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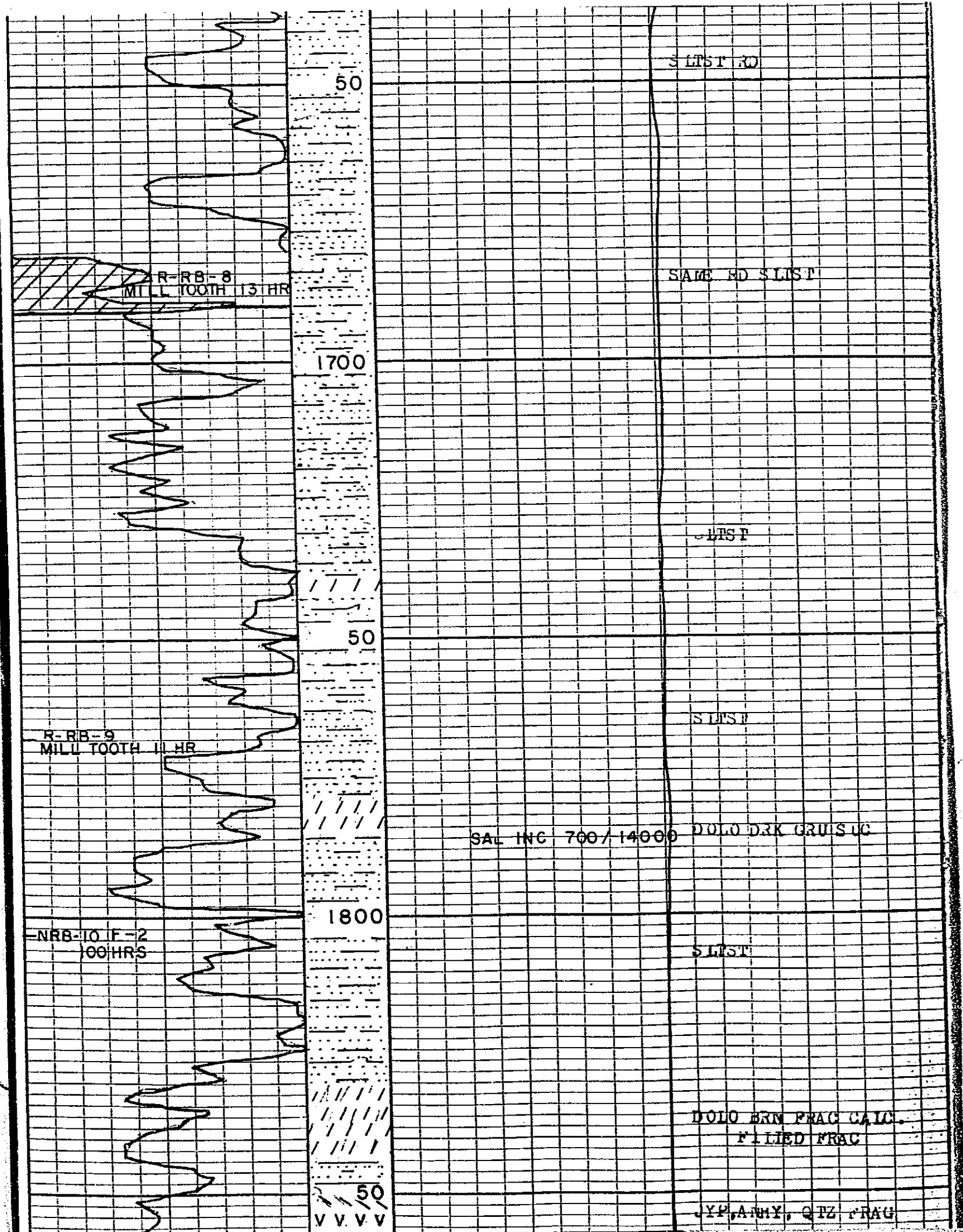
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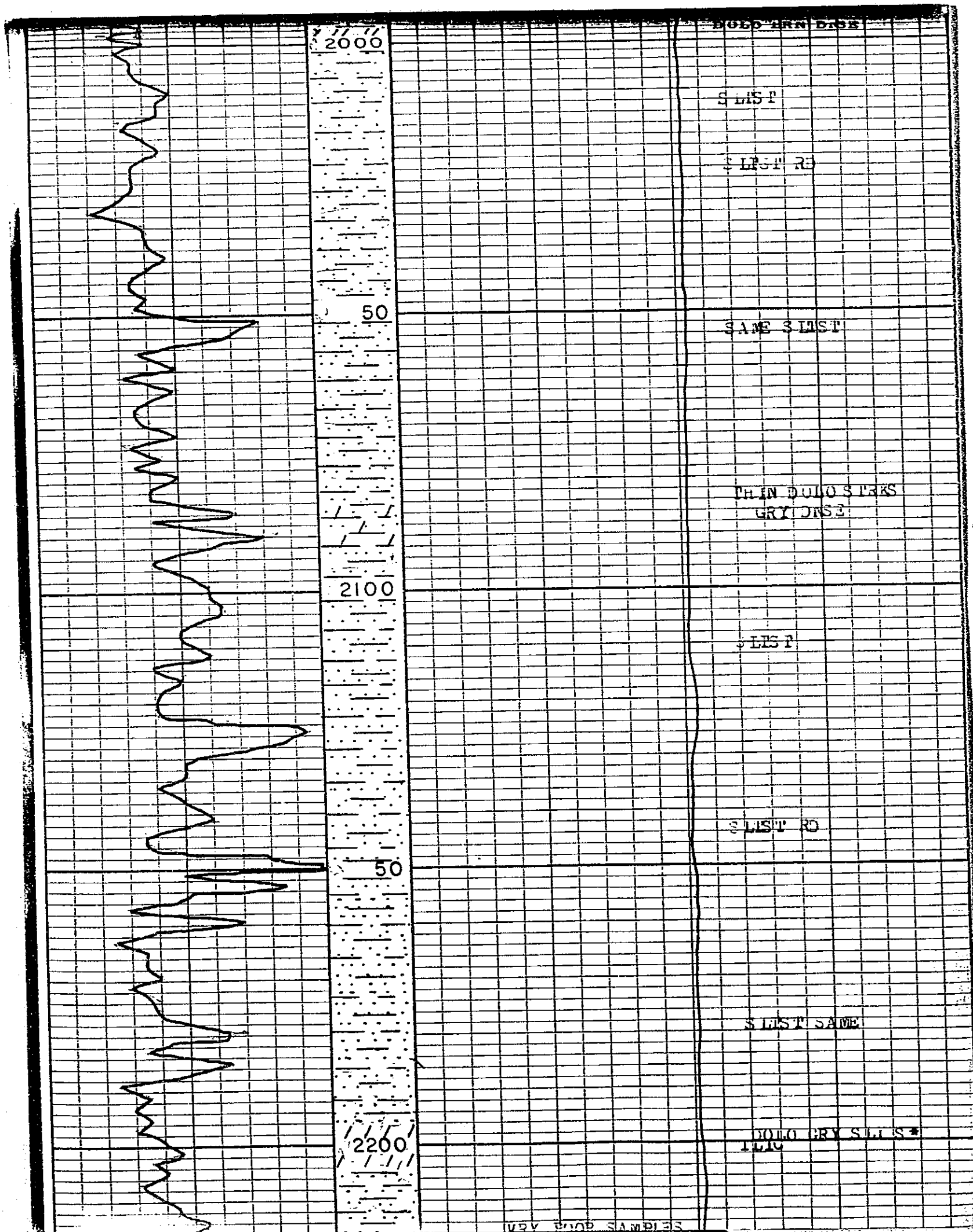


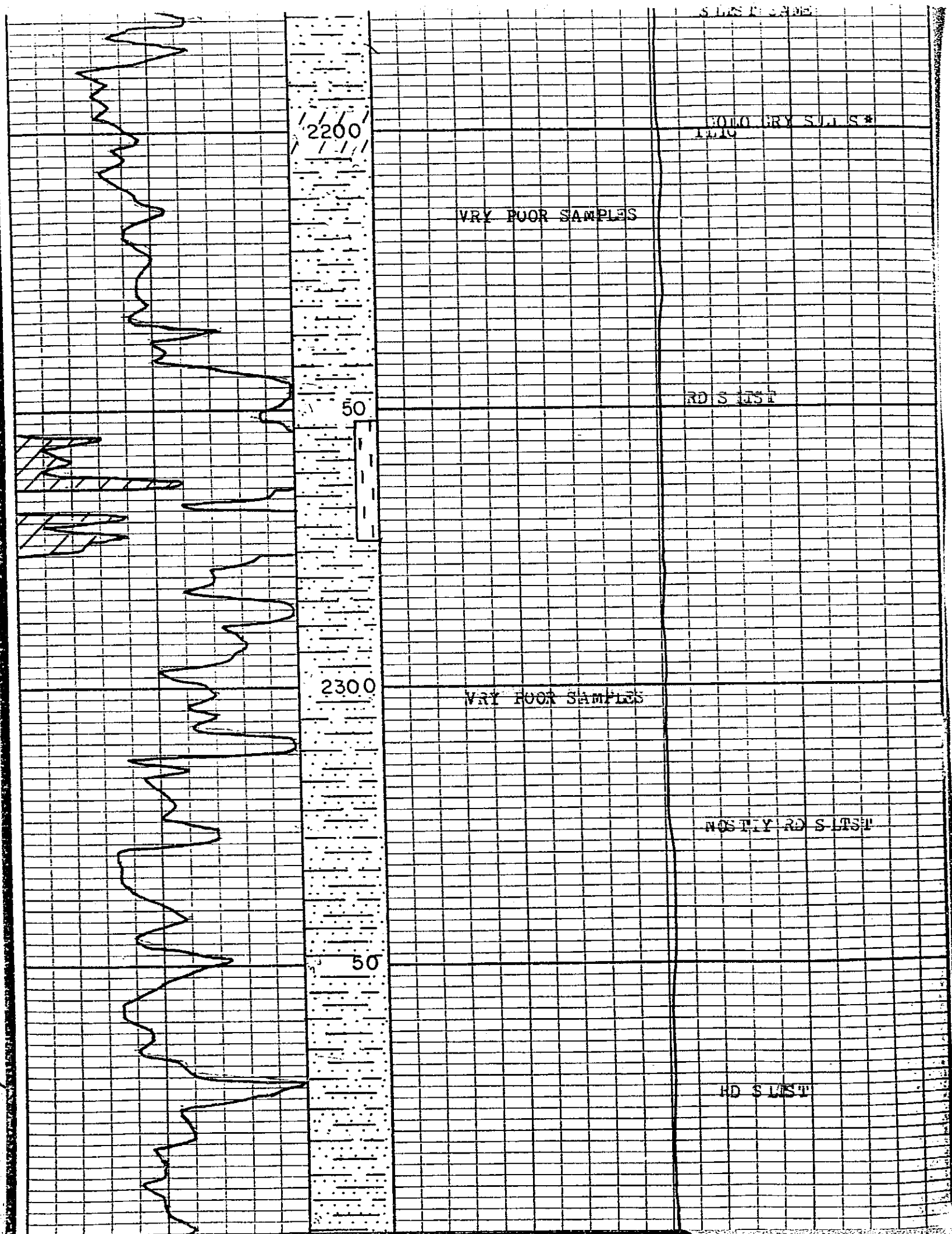


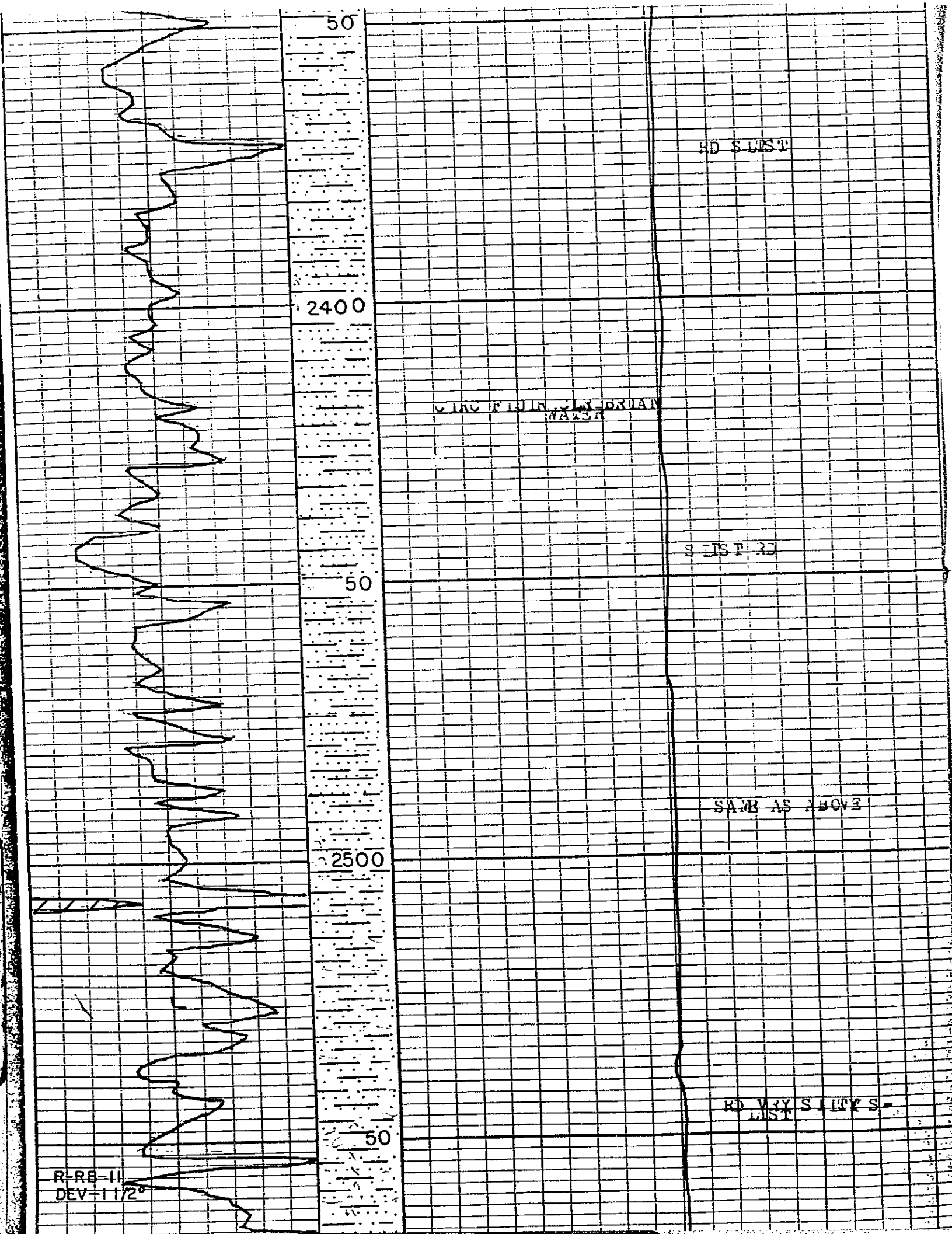


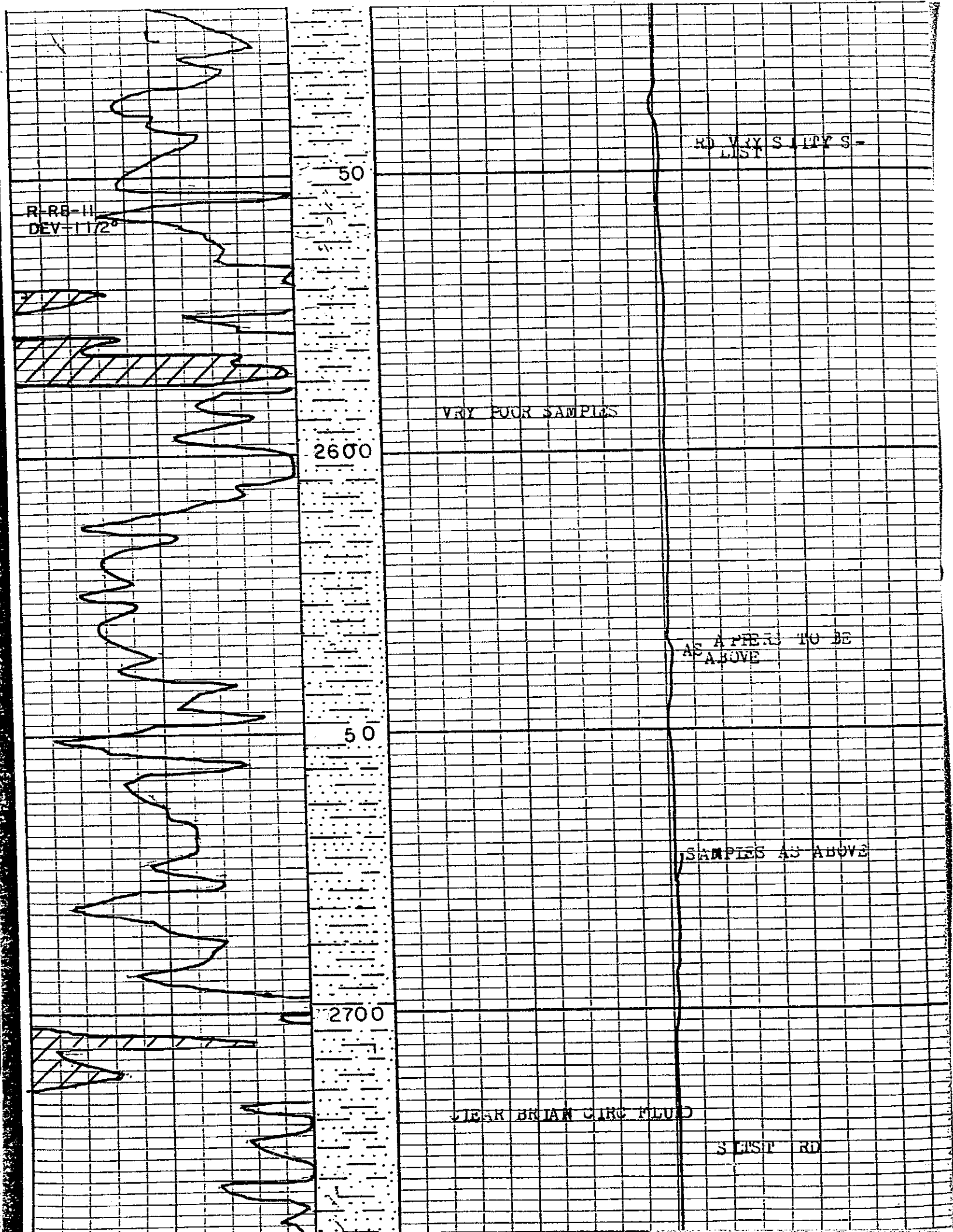


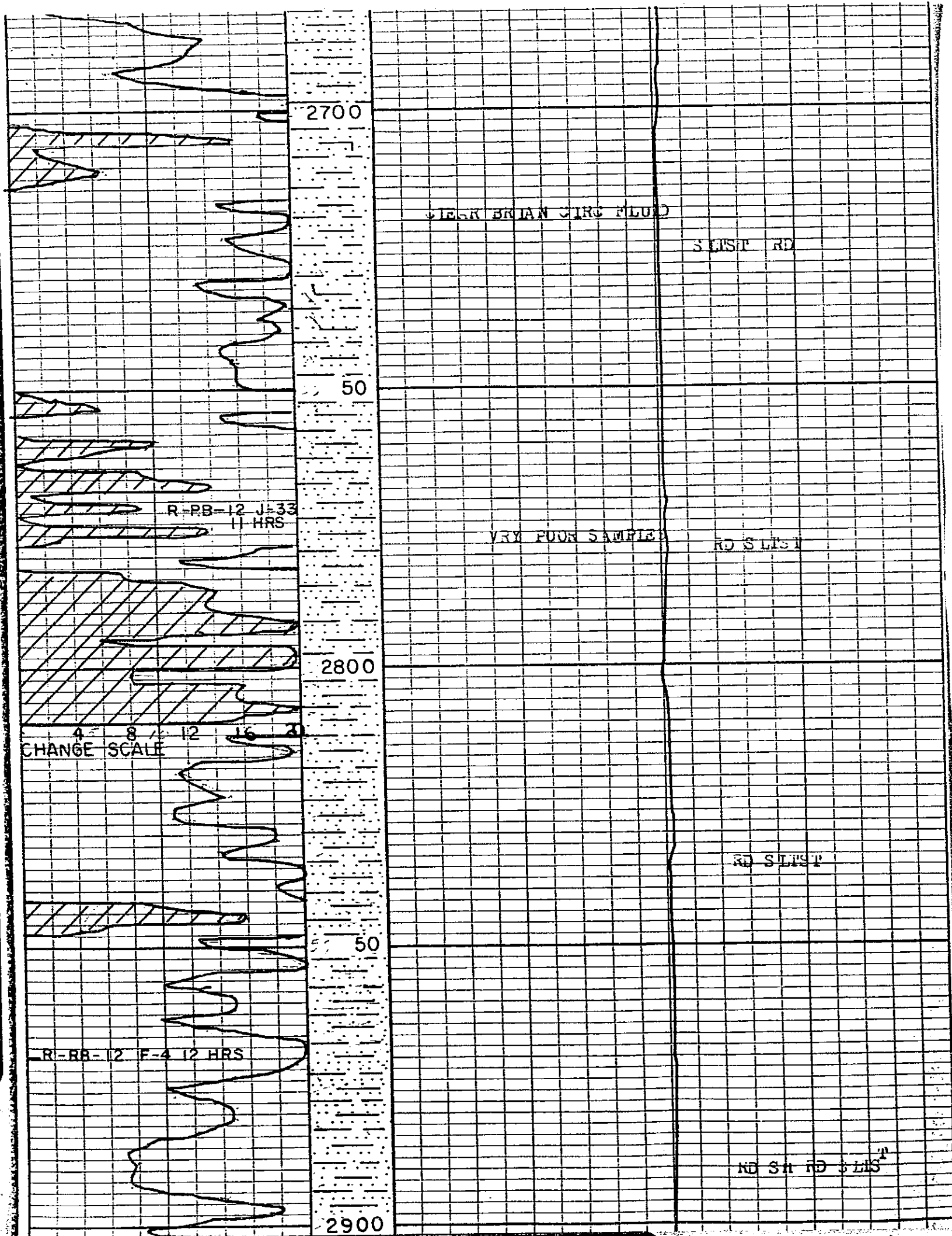












R-RB-12 F-4 12 HRS

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VERY POOR SAMPLES

POSS TOP IGNEOUS ROCKS

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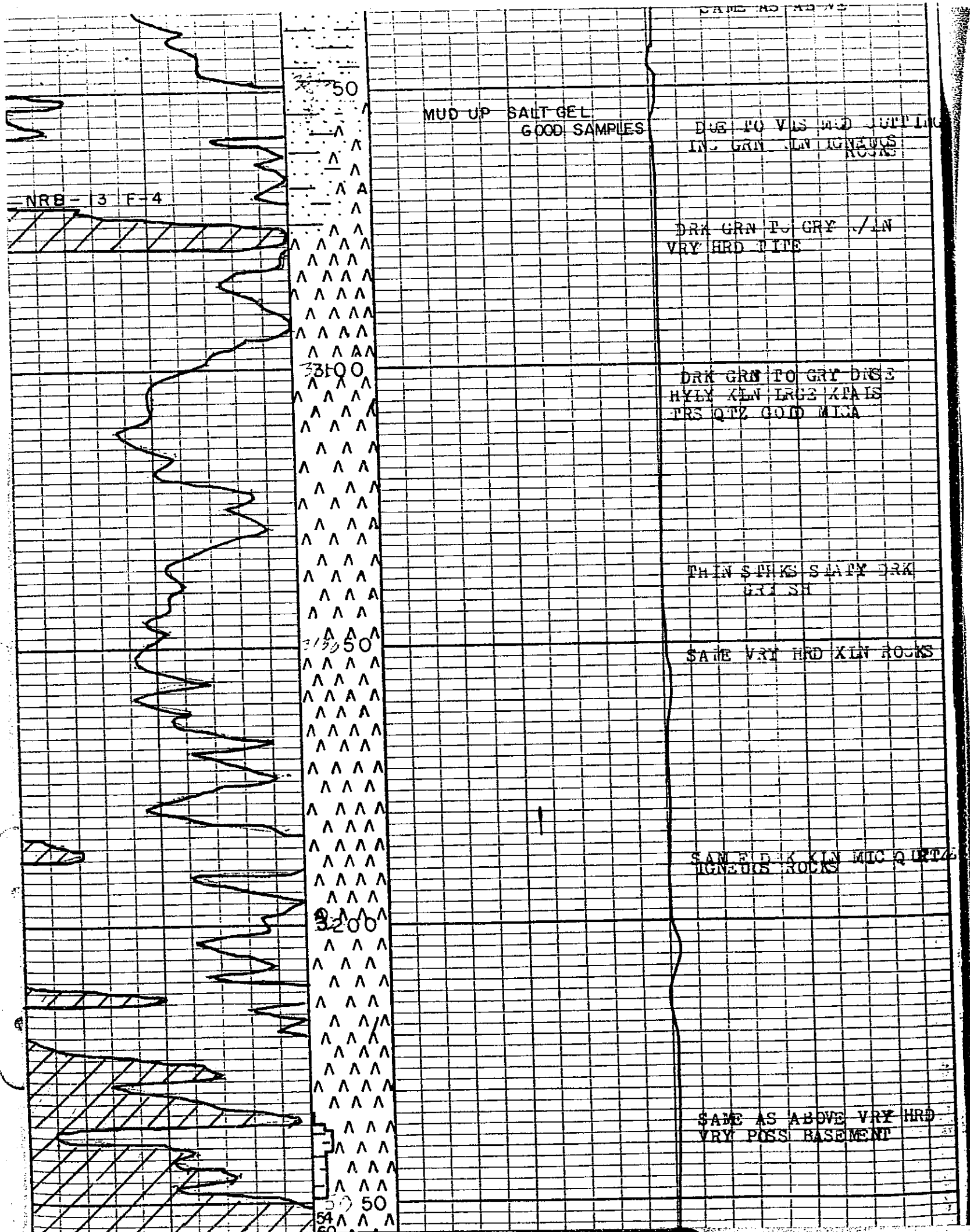
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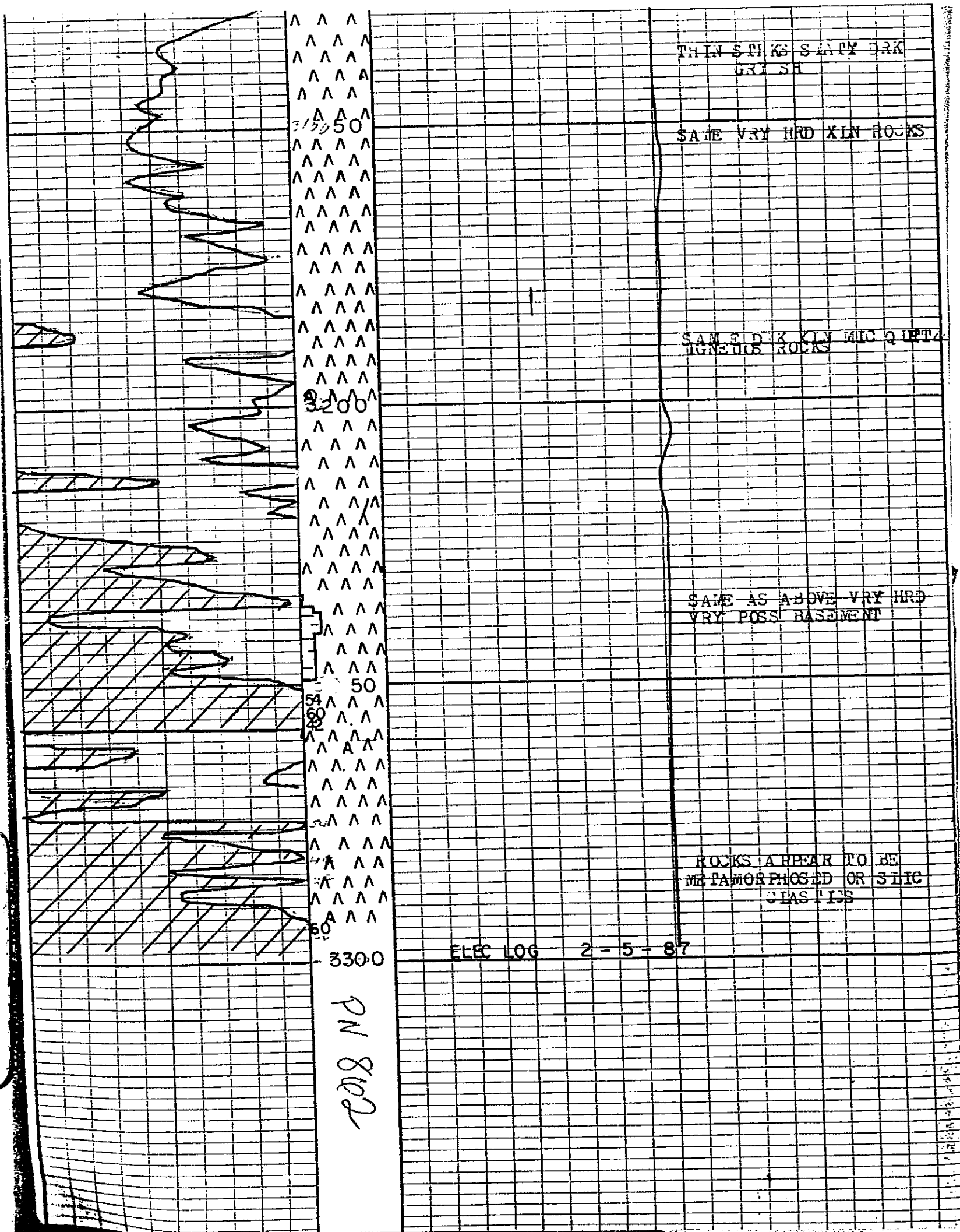
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**COMBINED
DRILLING
VENTURES INC**

OIL AND GAS PROPERTIES

APR 16 1987

020

April 10, 1987

R. A. Ybarra
Enforcement Director
Oil & Gas Conservation Comm.
State of Arizona
3110 N. 19th Ave., Suite 190
Phoenix, AZ 85015

Re: Well #1-B State
Sec 28 - T12N - R28E
Apache County, AZ

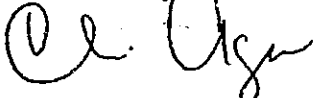
Dear Mr. Ybarra:

Please find enclosed the well completion report covering the above referenced well, prepared for your examination.

Also, the samples from said well have been completed and have been sent to your office.

If you should have any questions, please do not hesitate to call me at 214/458-8094. Thank you for your time and patience.

Sincerely,



Chris Agee
Landman

AGA/kr

cc: George Biggs

**COMBINED
DRILLING
VENTURES INC**

OIL AND GAS PROPERTIES

March 31, 1987

Mr. R.A. Ybarra
Oil and Gas Conservation Commission
State of Arizona
3110 N. 19th Avenue, Suite 190
Phoenix, AZ 85015

RE: Well No. 1-B State
SEC28-T12n-R28e
Apache County, AZ

Dear Mr. Ybarra,

Pursuant to our telephone conversation of 3/28/87, please find enclosed the following documents for your review:

1. Sundry Notices and Reports on Wells
2. Application to Plug and Abandon
3. Plugging Record
4. Completion report
5. Dual Laterolog

As we spoke in our conversation, Combined Drilling Ventures, Inc., was under the impression that these instruments had already been sent to your office. I sincerely apologize for the delay. We are currently "double bagging" the samples and hope to get them to both your office and the university as soon as possible.

Hopefully this will complete our obligations to the Oil and Gas Conservation Commission to your satisfaction. If you should have any questions, please do not hesitate to call me at 214-458-8094. Thank you for your time and consideration.

Sincerely,


Chris Agee
Landman



Oil and Gas Conservation Commission

STATE OF ARIZONA
3110 N. 19th AVENUE, SUITE 190
PHOENIX, ARIZONA 85015
PHONE: (602) 255-5161

April 3, 1987

Mr. Chris Agee
Combined Drilling Ventures, Inc.
12801 North Central Expressway, Suite 1260
Dallas, TX 75243

RE: Well No. 1-B State
Sec. 28, T.12N., R.28E.
Apache County, AZ

Dear Chris:

Enclosed please find copy of Form No. 4 (Well Completion Report) which was not included with your submittals on subject well.

Please fill out both sides as completely as possible and return to us, and upon receipt of same I will approve release of your bond. Thank you.

If we can be of further assistance, please let us know.

Sincerely,

R. A. Ybarra

R. A. Ybarra
Enforcement Director

Enclosure



Oil and Gas Conservation Commission

STATE OF ARIZONA

3110 N. 19th AVENUE, SUITE 190

PHOENIX, ARIZONA 85015

PHONE: (602) 255-5161

March 24, 1987

Combined Drilling Ventures, Inc.
12801 North Central Expressway, Suite 1260
Dallas, Texas 75243

RE: Well No. 1-B State
Sec. 28, T.12N., R.28E.
Apache County, AZ

Gentlemen:

This letter is to remind you that all records, logs and surveys, and samples on subject well were due in this office 30 days after the completion date of February 7, 1987.

Also, the landowner cannot convert this well to a water well until your bond is released and the bond will not be released until the above requirements have been fulfilled.

Please give this matter your immediate attention.

Sincerely,

R. A. Ybarra
R. A. Ybarra
Enforcement Director

/kb

cc: Mr. H. Jay Platt
P.O. Box 426
St. Johns, AZ 85936

Platt's address:

*P.O. Box 426
St. Johns, AZ 85936*

OIL AND GAS PROPERTIES

O & G CONS. COMM.

RECEIVED
ARIZONA STATE
BOARD
OF
ACCOUNTANCY
FEB 1987